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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/924,294	08/08/2001	Kyeong Hwi Lee	6175-15	3119

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EXAMINER	
WALLACE, SCOTT A	

ART UNIT	PAPER NUMBER
2671	

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/924,294	LEE ET AL.	
	Examiner	Art Unit	
	Scott Wallace	2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-10,13-15,19 and 23-33* is/are rejected.

7)☒ Claim(s) *5,6,11,16-18,20-22,34 and 35* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12/03/01* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claim 30 is rejected under 35 U.S.C. 102(e) as being anticipated by Hamilton et al., U.S. Patent No. 6,559,860.

3. As per claim 30, Hamilton et al discloses a computer system for processing data representing construction of a three-dimensional object (fig 15), the system comprising: a model data storage system (fig 1, #18) comprising stored model data representing construction of a three-dimensional object from a plurality of modeled components (fig 15); a computer processor coupled to the model data storage system (fig 1, #16), a program storage system (fig 1, #18), and output display system (fig 1, #38), the program storage system comprising instructions to configure the processor to: retrieve the stored model data from the model data storage system; render a first view of the model in which the plurality of modeled components are in a first positional arrangement (fig 15); render a second view of the model in which the plurality of

modeled components are in a second positional arrangement that is different from the first positional arrangement (fig 15); and display an overlaid view of the first and the second model views on the output display system, the overlaid view distinguishing a change between the first and the second positional arrangements of the modeled components (fig 15).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 23-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamilton et al., U.S. Patent No. 6,59,860 in view of Stone.

3. As per claim 1, Hamilton et al discloses a computer-implemented method of processing a three-dimensional model of an object (fig. 15), the model comprising a plurality of model components (fig. 15, #172 and #204), and the method comprising: based on identifying the different positional arrangements, automatically generating an image of the model depicting a change in a position of a first one of the model components with respect to a second one of the model components (fig 15). However, Hamilton et al does not specifically disclose constructing a data structure identifying different positional arrangements of the model components to represent different positions of movable ones of the model components. This is disclosed in Stone et al in column 2 lines 33-50. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a data structure with the system of Hamilton et al because this provides an orderly way to keep track of the relative positioning of objects with respect to each other which would make it easier for user when deciding to make positional changes.

4. As per claim 23, Hamilton et al discloses displaying the first model view and the second model view simultaneously in a common view area to represent a three-dimensional model in differing positions (fig 15). However, Hamilton et al does not disclose accessing a model data structure to render a first model view and a second model view, the model data structure comprising an interrelationship of a plurality of model components. This is disclosed in Stone et al in column 1 lines 30-42 and column 2 lines 32-50. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a model data structure with the system of Hamilton et al because this provides an orderly way to keep track of the relative positioning of objects with respect to each other which would make it easier for user when deciding to make positional changes.

5. As per claim 24, Hamilton et al discloses annotating the first model view and the second model view in the common view area to display a dimension measurement (fig 14, #192).

6. As per claim 25, Hamilton et al discloses the second model view comprises a differing subset of the plurality of model components from the first model view (fig 15).

7. As per claim 26, Hamilton discloses wherein the second model view represents a positionally altered arrangement of the plurality of model components (fig 15).

8. As per claim 27, Hamilton discloses displaying the first model view and the second model view simultaneously in the common view area renders model components having a same positional arrangement at a same position and model components having a differing positional arrangement at differing positions (fig 15).

9. As per claim 28, Hamilton et al discloses displaying the first model view using a first set of display attributes; and displaying the second model view using a second set of display attributes to distinguish the positionally altered arrangement of the plurality of model components (fig 15).

10. As per claim 29, Stone discloses modifying the model data structure to accommodate a new configuration of the three-dimensional model (column 1 lines 30-42).

11. Claims 2-4, 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamilton et al. in view of Stone et al. as applied to claim 1 above, and further in view of Silva et al., U.S. Patent No. 6,473,081.

12. As per claim 2, Hamilton et al discloses the image depicting the object having the model components in a first a in a second positional arrangement (fig 15). However, Hamilton et al and Stone et al fail to disclose traversing a model hierarchy to render the image of the model, the model hierarchy comprising the interrelationship of the plurality of model components. This is disclosed in Silva et al in column 3 lines 59-67 and column 4 lines 1-10. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a model hierarchy with the systems of Hamilton et al and Stone et al because this more clearly convey the arrangement of graphical components (column 3 lines 48-55).

13. As per claim 3, Silva et al discloses the model hierarchy further comprises data representing different positional arrangements as defined during a model design process (column 4 lines 1-11); traversing the model hierarchy to render the image comprises rendering the image based on the data representing the different positional arrangements (column 4 lines 1-11); and generating the image further comprises rendering the image in a view area (fig 1).

14. As per claim 4, Hamilton et al discloses wherein generating the image comprises depicting a first component in a both a first and a second position (fig 15).

15. As per claim 7, Hamilton et al discloses wherein different display attributes are applied to depict the first component in the first position than are applied to depict the first component in the second position (fig 15, line thickness).

16. As per claim 8, Stone et al discloses wherein the display attributes comprise attributes selected from the group consisting of color, line weight and line pattern (column 1 lines 30-42 and column 2 lines 32-50).

17. As per claim 9, Hamilton et al discloses wherein a solid line font depicts the first component in the first position and a phantom line font depicts the first component in the second position (fig 15).

18. Claims 10, 12-14, 19, 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silva et al in view of Hamilton et al.

19. As per claims 10 and 37, Silva et al discloses a computer-implemented method of processing data representing a three-dimensional object model (column 1 lines 30-35), the method comprising: traversing a model hierarchy to render a first view of a model (column 3 lines 59-67 and column 4 lines 1-10), the model hierarchy comprising an interrelationship of a plurality of model components (column 3 lines 59-67 and column 4 lines 1-10), the model components having a first positional arrangement with respect to each other, and the first view depicting the first positional arrangement of the model components (column 3 lines 59-67 and column 4 lines 1-10); traversing a positionally altered version of the model hierarchy to render a second view of the modeled object (column 3 lines 59-67 and column 4 lines 1-10), the positionally altered version comprising the plurality of model components in a second positional arrangement with respect to each other (column 3 lines 59-67 and column 4 lines 1-10), the second positional arrangement differing from the first positional arrangement, and the second view depicting the second positional arrangement of the model components (column 3 lines 59-67 and column 4 lines 1-10). However, Silva et al does not disclose combining the first view and the second view to display a composite image of the model, the composite image simultaneously representing both the first and the second positional arrangements. This is disclosed in Hamilton et al in fig 15. It would have been obvious to one of ordinary skill in the art at the time the invention was made to display the combined images because it allows the user to see how the moved parts affect the other parts.

20. As per claims 12 and 38, Hamilton et al discloses the first and the second positional arrangements each comprise a same first subset of model components that have a same layout in both the first and second positional arrangements (fig 15); and the first and the second positional arrangements each comprise a second subset of model components that have a first layout in the first positional arrangement that differs from a second layout in the second positional arrangement (fig 15).

21. As per claim 13, Hamilton et al discloses the composite image comprises a single representation of the first subset of model components and a first and second representations of the second subset of model components, the first representation distinguishing the first positional arrangement of the second subset and the second representation distinguishing the second positional arrangement of the second subset (fig 15).

22. As per claim 14, Hamilton et al discloses wherein differing display attributes distinguish change in positional arrangement of the second subset (fig 15).

23. As per claim 19, Silva et al discloses wherein the positionally altered version of the model hierarchy is generated during preparation of a formal drawing of the model (column 3 lines 59-67 and column 4 lines 1-10).

24. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silva et al in view of Hamilton et al in further in view of Stone et al.

25. As per claim 15, Silva and Hamilton do not disclose wherein display attributes comprise line style attributes selected from a group consisting of color, line weight, and a line pattern. This is disclosed in Stone in column 2 lines 32-50, It would have been obvious to one of ordinary skill in the art at the time the invention was made have different attributes because this would make it easier for the user to visually see the difference between the original position and the new one.

26. Claims 31-33, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamilton in view of Silva et al.

27. As per claim 31, Hamilton does not disclose wherein the stored model data represents construction of the three-dimensional object based on a hierarchical relationship between the plurality of modeled components. This is disclosed in Silva et al in column 3 lines 59-67 and column 4 lines 1-10. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a model hierarchy with the systems of Hamilton et al and Stone et al because this more clearly convey the arrangement of graphical components (column 3 lines 48-55).

28. As per claim 32, Silva et al discloses the instructions to render the first and the second model views comprise instructions to render in accordance with the hierarchical relationship (column 3 lines 59-67 and column 4 lines 1-10).

29. As per claim 33, Hamilton discloses the plurality of modeled components comprise a first and a second modeled component having a different positional arrangement with respect to each other in the first and second model views (fig 15); and the instructions to display the overlaid view comprise instructions to display the first modeled component at a common position on the output display and to display the second modeled component at different positions on the output display to distinguish change in positional arrangement of the second model component with respect to the first modeled component (fig 15).

30. As per claim 36, Silva et al discloses a using a video display in fig 2, #212. Although Silva does not disclose using a plotter or a printer, this would have been obvious to one of ordinary skill in the art because these well known output devices.

Allowable Subject Matter

31. Claims 5-6, 11, 16-18, 20-22, 34-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Scott Wallace** whose telephone number is **703-605-5163**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mark Zimmerman**, can be reached at 703-305-9798.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600